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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,834	09/15/2003	Donald B. Nagy	GP-302758	1185

7590 12/07/2005

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EXAMINER	
GARBER, CHARLES D	

ART UNIT	PAPER NUMBER
2856	

DATE MAILED: 12/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/662,834	NAGY ET AL.
	Examiner	Art Unit
	Charles D. Garber	2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 November 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-10,12 and 15-19* is/are rejected.

7)☒ Claim(s) *2, 11, 13, 14 and 20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Arguments

Applicant's arguments filed 11/14/2005 have been fully considered but they are not persuasive.

Applicant argues both Kerho and Paulsell reference teach either/or rather than both span and zero gas.

Examiner disagrees. While Kerho disclosed either/or, Paulsell taught exponential dilution of the span gas to the zero gas as a function of time. Paulsell accomplishes the change in gas mixture ration using a mixing "flask" described in the "Experimental Plan". Though Paulsell does teach suddenly switching from supply of span gas to zero gas to the flask the supply from the flask to the instrument under test varies in time.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 3-6, 8, 9, 10, 12, 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kerho et al. (US Patent 3,924,442) in view of C.D. Paulsell, P.E., "The Use Of Exponential Dilution Flow In Gas Analyzer Calibrations, U.S. Environmental Protection Agency, Ann Arbor, MI 48105 (from Applicant's IDS, henceforth referred to as "Paulsell").

Regarding claims 1, 12 and 17, Kerho et al. (US Patent 3,924,442) discloses a system used for automatically calibrating gas concentration measuring equipment including an O2 gas analyzer 33 (first gas analyzer), a CO gas analyzer (second gas analyzer), a span gas which is a mixture CO and O2 gas 48. Kerho also supplies a calibration mixture to both analyzers (see items 70, 71 and 72. Kerho further supplies a zero (non-reactive) gas 92. Kerho switches from one gas to the other based on a control signal provided by a timer (see figure 1 and column 5 line 59 to column 6 line 22).

However Kerho does not vary the mixture gases as a function of time as in the instant invention. Kerho merely switches from one gas to the other as noted.

Paulsell teaches changing from a span gas to a zero (i.e. non-reactive) gas concentration exponentially over time. Such exponential dilution provides a means of generating dynamic concentrations from any gas for all analyzer ranges, in a repeatable manner, with minimal gas consumption and over a short time.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to vary the zero and span gas in order to validate characteristics of

the analyzer dynamic response, in other words, how quickly or slowly the analyzer responds to changes.

As for claims 3-6, 8, 9, Kerho includes a recorder 36 that records readings from all the analyzers, electronic signal corrector 35 that electronically compensates both analysers based on the measured vs. expected concentrations of the zero and span gases (column 6 lines 38-65).

As for claim 10, Examiner takes Official Notice that it is widely known to diagnose a detector as faulty during calibration if the readings vary too widely. It would have been obvious to one having ordinary skill in the art at the time the invention was made to diagnose a detector as faulty during calibration if the readings vary too widely otherwise the detector may give false or inaccurate readings during normal use. Such diagnoses may be used to inform maintenance personnel to repair or replace the faulty sensor.

As for claim 15, Paulsell further teaches the zero and span gas are combined within a dilution flask wherein mixing occurs to provide for the time varying change in concentration. It would have been obvious to one having ordinary skill in the art at the time the invention was made to mix the zero and span gas in a dilution flask in order to effect the advantageous time varying concentration.

As for claim 16, Paulsell further teaches the zero and span gas are combined within a dilution flask wherein mixing occurs to provide for the time varying change in concentration. It would have been obvious to one having ordinary skill in the art at the time the invention was made to mix the zero and span gas in a dilution flask in order to

effect the advantageous time varying concentration. Though the references applied above disclose the claimed invention except for making it portable, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make it portable, since it has been held that making an old device portable or movable without producing any new and unexpected result involves only routine skill in the art, *In re Lindberg*, 93 USPQ 23 (CCPA 1952).

Claims 1, 3-9, 12, 17-19, are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagy (US Patent 5,835,974) in view of C.D. Paulsell, P.E., "The Use Of Exponential Dilution Flow In Gas Analyzer Calibrations, U.S. Environmental Protection Agency, Ann Arbor, MI 48105 (from Applicant's IDS, henceforth referred to as "Paulsell").

Nagy discloses calibration of an emission analysis bench test device including gas analyzers 14, 16, 18, 20 wherein flame ionization detector 14 measures hydrocarbons with a linear response. Zero (N2) and span gases (HC, NOx, CO and CO2) are combined in varying combinations as well as intermediate (i.e. stepwise) concentrations for purposes of analyzer calibration (column 3 lines 21-52). Nagy also discloses he actual (exact) percentages for each sample are then determined by the readings of the flame ionization detector (FID) analyzer which gives a linear output. Alternatively, another previously calibrated analyzer or one having an accurate linear output could be used for determining the actual percentages. These actual percentages are then used in determining the readings of the other analyzers which were checked using the same gas samples. (see abstract, column 3 line 60 to column 4 line 5 and

claims 2 and 3). Valves 50 and mass flow controller 40 control the mixture combinations and concentration values used in the method (column 4 liens 36-48).

Nagy however does not vary the mixture gases as a function of time as in the instant invention. Kerho merely switches from one gas to the other as noted.

Paulsell teaches changing from a span gas to a zero (i.e. non-reactive) gas concentration exponentially over time. Such exponential dilution provides a means of generating dynamic concentrations from any gas for all analyzer ranges, in a repeatable manner, with minimal gas consumption and over a short time.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to vary the zero and span gas in order to validate characteristics of the analyzer dynamic response, in other words, how quickly or slowly the analyzer responds to changes.

As for claim 19, Paulsell further teaches the zero and span gas are combined within a dilution flask wherein mixing occurs to provide for the time varying change in concentration. It would have been obvious to one having ordinary skill in the art at the time the invention was made to mix the zero and span gas in a dilution flask in order to effect the advantageous time varying concentration. Though the references do not expressly teach valves that direct flow to and from the mixing chamber Examiner takes Official Notice that it is widely known in the art to provide control valves to and from a mixing chamber and one having ordinary skill in the art would utilize valves positioned in this manner to prevent backflow and control the rate of gas delivery.

Allowable Subject Matter

Claims 2, 11, 13, 14 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles D. Garber whose telephone number is (571) 272-2194. The examiner can normally be reached on 8:00 a.m. to 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Charles D. Garber
Primary Examiner
Art Unit 2856

cdg